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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,773	12/28/2001	Benn Bollay	10547-0016-999	2128
7590 03/26/2008 Hughes Electronics Coporation Corporate Patents & Licensing P.O.Box 956 Bidg. R11, Mail Station A109 El Sagundo, CA 90245-0956				
EXAMINER SEPCHECK, GREGORY B				
ART UNIT 2619		PAPER NUMBER		
MAIL DATE 03/26/2008		DELIVERY MODE PAPER		

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/040,773  
Filing Date: December 28, 2001  
Appellant(s): BOLLAY ET AL.

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Kevin G. Mierzwa  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 1/11/2008 appealing from the Office action mailed 10/11/2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

Appellant's brief presents arguments relating to the objection of the specification for containing hyperlinks. This issue relates to petitionable subject matter under 37 CFR 1.181 and not to appealable subject matter. See MPEP § 1002 and § 1201.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

7016980	MAYER et al	3-2006
6260070	SHAH	7-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 7-10, 14-16, and 18-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Mayer.

- Regarding Claims 1, 3, 7, 14-16, and 21-24,

Mayer discloses a method and apparatus for analyzing one or more firewalls (Title). Referring to Fig. 1, Mayer shows that a query (packet)

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requesting a particular service and indicating a source and destination IP addresses is received at a firewall 120,150 (Col. 8, lines 48-53; claim 1,14,21,22,23 – receiving a packet containing a request for content at a content filtering router/IP device; claim 1,14,21,22,23 - packet comprising a first destination IP address of a content server).

Mayer shows that the received query is processed by simulating the behavior of all packets described by the query as the traverse the network (Col. 10, lines 10-11). This is performed by firewall analysis tool 200 (Fig. 2), which evaluates the query object against the filtering files for each gateway (filtering router) specified gateway-zone graph 300 (routing table) generated for the query (Col. 6, lines 25-40; claim 3,21,24 – ascertaining through which output port said packet should be forwarded based on first IP address and a routing table stored on filtering router).

Mayer shows propagating the query over all the edges in the gateway-zone graph, each edge representing a firewall (or router) interface (Col. 10, lines 27-38). Mayer shows that each firewall interface has its own unique IP address. Therefore, disclosure of the query processing in Mayer is equivalent to determining if the destination of a query is on a list of addresses to be filtered (corresponding to each gateway/firewall) and propagating the query to the IP addresses of each of those multiple gateway/firewall (levels of filtering routers) thus determined (claim 1,14,21,22,23,24 – determining if first destination IP address is on a list of addresses to be filtered; claim 1,14,21,22,23,24 – packet comprising/adding second destination IP address of content filtering router; claim

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1,21 – routing packet to an output port on filtering router based on first destination IP address and list; claim 14,22,23,24 – sending packet toward content filtering router; claim 7 – sending packet to an additional content filtering router, packet comprising third IP address; claim 15 – prior to adding, determining how many filtering levels the request is subject to; claim 16 – adding additional IP address for each level).

Each gateway node inherently comprises a CPU and memory containing an operating system for carrying out the above-described procedures (instructions; claim 21,22 – filtering router comprising CPU and memory containing operating system; claim 23 – computer readable storage containing stored computer program of instructions).

- Regarding Claims 2 and 8,

Mayer discloses a method and apparatus for analyzing one or more firewalls that meets all limitations of the parent claim.

Mayer shows that the service requested by a query will not be provided to a user until a “pass” or “drop” (blocked) action is verified at each gateway specified in the query (Col. 5, lines 45-47; claim 2 – determining comprises ascertaining that first IP address is on list; claim 2 – routing comprises directing packet someplace other than first IP address; claim 8 – sending packet to a service provider that can notify a user who made request that content has been blocked).

- Regarding Claims 4, 9, and 10,

Mayer discloses a method and apparatus for analyzing one or more firewalls that meets all limitations of the parent claim. Mayer shows that the firewall's configuration interface defines the ranges of IP addresses, the protocols and corresponding port-numbers (Col. 5, lines 38-43; Col. 6, lines 5-10; claim 4 – utilizing a routing protocol to determine said output port; claim 9 – accepting first IP address and associated output port; claim 9 – storing first IP address and associated output port in list; claim 10 – saving first IP address and associated port in routing table).

- Regarding Claims 18-20,

Mayer discloses a method and apparatus for analyzing one or more firewalls that meets all limitations of the parent claim. Mayer shows that the query processing commences by performing a gateway-zone graph search according to the source host-group and the service (indicator) of the query (Col. 10, lines 14-26; claim 18 – acquiring source IP address and indicator of whether content filtering service is to be applied; claim 18 – storing source IP address and indicator; claim 19 – obtaining a filtering level associated with source IP address)

As shown above, the graph search evaluates the query object against each rule-base for each gateway node in the graph (Col. 10, lines 23-26; claim 20 – acquiring list of filtering levels and associated additional IP addresses, each filtering level associated with different additional IP address of different filtering router; claim 20 – storing list of filtering levels and associated IP addresses).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayer in view of Shah (US006260070B1).

- Regarding Claims 5 and 6,

Mayer discloses a method and apparatus for analyzing one or more firewalls that meets all limitations of the parent claim.

Mayer does not explicitly disclose the use of BGP or a BGP routing table.

Shah discloses requesting and selecting services available over the Internet by utilizing border gateway protocol, including referencing a BGP routing table (Abstract; Fig. 5; claim 5 – routing protocol is BGP; claim 6 – routing table is BGP table).

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method and apparatus of Mayer by utilizing Border Gateway Protocol and BGP routing tables, as shown by Shah. This would enable the method of Mayer to be applied to networks utilizing BGP for communication between gateways in a network.



5. Claims 11-13, 17, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayer.

- Regarding Claims 11-13, 17 and 25,

Mayer discloses a method and apparatus for analyzing one or more firewalls that meets all limitations of the parent claim.

Mayer does not explicitly disclose routing content requests to the content server and receiving the content without forwarding the requests to any filtering routers when the first IP destination is not included on a list of addresses to be filtered.

However, in the disclosure of Mayer, if a query is not restricted in the filtering files of any gateways, it will be allowed to pass unrestricted (claim 11 – ascertaining that first IP address is not on list; claim 12 – removing second IP address from packet; claim 13 – directing packet toward first IP address; claim 17,25 – receiving content from server, where first IP address was not on a routing table of filtering router).

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method and apparatus of Mayer by routing content requests to the content server and receiving the content without forwarding the requests to any filtering routers when the first IP destination is not included on a list of addresses to be filtered, thereby completing the content request since no filtering is required.

**(10) Response to Argument**

Appellant's arguments in the Brief filed 1/11/2008 have been fully considered but they are not persuasive.

- On pg. 8-10, 13, and 15-16 of the Brief, Appellant contends that Mayer does not teach or suggest the use of a content filtering router as in claims 1, 14, and 21-23. Rather, Appellant alleges that Mayer discloses packet filtering that does not meet the claim limitations regarding content filtering. Appellant further contends that Mayer does not disclose the "determining" and "routing" steps of claims 1, 14, and 21-23. Appellant does not provide separate arguments for Mayer's alleged deficiency of these steps, but instead reverts back to Mayer's lack of disclosing "content filtering".
- The Examiner respectfully disagrees. As shown in the rejection, Mayer discloses a method and apparatus for analyzing firewalls. Firewalls are known to those of ordinary skill in the art to provide filtering of Internet service traffic (or "content") at the routers of the network, where Internet traffic consists of a series of packets (See Mayer, "Background of the Invention"). The "packet filtering" cited in Mayer pertains to the filtering of Internet protocol "packets" that make up the Internet traffic that is filtered by the firewalls. Therefore, the "packet filtering" disclosed by Mayer properly meets

the limitations pertaining to "content filtering" in the claims. The rejection of claim 1 also separately shows how the "determining" and "routing" steps of claim 1 are met by Mayer. Therefore, the rejections of claims 1, 14, and 21-23 are proper.

- On pg. 10-11 of the Brief, Appellant contends that Mayer's disclosure of passing or dropping packets in response to the address being on a list does not meet the limitations of ascertaining that first IP address is on a list and directing the packet someplace other than the first destination IP address. Appellant does not elaborate as to why the cited disclosure of Mayer fails to meet the claim limitations.
- The Examiner respectfully disagrees. As admitted by Appellant, Mayer discloses performing an action, such as passing or dropping packets, in response to the source and/or destination address of the packet meeting a rule of the firewall, thereby meeting the limitation of "ascertaining" discussed by Appellant. Furthermore, Mayer's disclosure of propagating a query to the IP addresses of multiple gateways/firewalls and the actions of passing or dropping a packet are cited as meeting the limitation of "directing said packet someplace other than said first destination IP address". Therefore, the rejection of claim 2 is proper.

- On pg. 11 of the Brief, Appellant contends that the cited portions of Mayer merely sets forth a "route scheme" and does not disclose ascertaining the output port to forward the packet based on the destination IP address and a routing table, as in claim 3, or a routing protocol determining the output port, as in claim 4.
- The Examiner respectfully disagrees. As shown in the rejection of claim 3, Mayer discloses evaluating the "query" for requesting service against the filtering files of gateways specified in the gateway-zone graph. The rejection clearly shows that Mayer's gateway-zone graph is mapped to the claimed "routing table". Also, as previously shown in the rejections of claims 1 and 2, the filtering files of a gateway filters and performs actions on packets, including passing the packets (through the proper output port) based upon the source and/or destination addresses. Therefore, the rejection of claim 3 is proper. Furthermore, the rejection of claim 4 cites disclosure from Mayer showing that the firewall's configuration interface defines the ranges of addresses, the protocols and corresponding port numbers. Therefore, the rejection of claim 4 is also proper.
- On pg. 11-13 of the Brief, Appellant contends that Mayer does not disclose an additional content filtering router having a third destination IP address, as in claim 7, or of storing destination IP

addresses and their corresponding output ports, as in claims 9 and 10. Appellant alleges the disclosures cited in the rejections merely refer to specifics of the firewall analysis tool.

- The Examiner respectfully disagrees. Those specifics of the firewall analysis tool disclosed by Mayer in column 10, lines 27-38 relate to propagating the service query to the each of the filtering gateways of the network based upon the gateway-zone graph. Since each filtering gateway interface has its own unique IP address, this disclosure meets the contested claim limitation of an additional content filtering router comprising a third destination IP address, and the rejections of claims 7, 9, and 10 are proper.
- On pg. 12 of the Brief, Appellant contends that Mayer's disclosure of passing or dropping packets does not provide for sending the packet to the service provider such that the service provider can notify a user who made the request that the content has been blocked, as in claim 8.
- The Examiner respectfully disagrees. The cited disclosure of Mayer states that the action of "passing or dropping" is performed on packets of a session at a firewall gateway/router, which belong to the network/service provider. As shown in the rejection of claim 1, the packets (content) of a service corresponds to a user query within a query-answer mechanism, for which results are presented

to the user (see also Col. 12, lines 1-5). Therefore, the disclosures meet the contested limitation and the rejection of claim 8 is proper.

- On pg. 13 of the Brief, Appellant contends that Mayer makes no distinction for determining a request is to be subjected to a content filtering service based on the destination IP address and adding a second destination IP address of a content filtering router to the packet, as in claims 14 and 23, because Mayer is directed to simulation.
- The Examiner respectfully disagrees. As shown in the Response to Arguments section of the Final Rejection filed 10/11/2007, Mayer's disclosure of simulation is irrelevant and does not exclude Mayer from disclosing the elements of the pending claims. The disclosures cited by Mayer are equally applicable to implementation and operation of network firewalls, gateways, routers, etc. because the simulations taught by Mayer are meant to model the actual implementation of the network. Therefore, the cited disclosures of Mayer for determining the appropriate filtering and routing of a user query for a service utilizing a gateway-zone graph that identifies the gateways of the network by IP address and port meet the contested limitations of the claims and the rejections of claims 14 and 23 are proper.

- On pg. 14 of the Brief, Appellant contends that Mayer does not disclose determining how many content filtering levels are to be subjected to a request and adding an additional destination IP address for each level, as in claims 15 and 16.
- The Examiner respectfully disagrees. The rejection of claim 15 clearly shows that Mayer's disclosure of propagating the query to the IP addresses of each of multiple gateways/firewalls is mapped to the levels of filtering routers the query is to be subjected to (see the bottom of pg. 3 of the Final Rejection). Therefore, the rejection of claims 15 and 16 are proper.
- On pg. 14 of the Brief, Appellant contends that the disclosure of Mayer cited in support of rejecting claim 18 does not teach or suggest acquiring the source IP address and an indicator of whether the content service is applied to the source IP address and storing the source IP address and the indicator.
- The Examiner respectfully disagrees. Lines 14-26 of column 10 discloses initially attaching a user query to a node containing the source host group, which maps to the claim limitation of "acquiring the source IP address". The rejection also shows that the user query object, or service, is mapped to the claimed "indicator". The rejection continues by showing that the query object is evaluated against each rule-base object for each gateway node encountered

in the search of the gateway-zone graph, thus meeting the limitation of "storing the source IP address and the indicator". Therefore, the rejection of claim 18 is proper.

- On pg. 14-15 of the Brief, Appellant contends that the disclosure of Mayer cited in support of rejecting claims 19 and 20 does not teach obtaining a filtering level associated with the source IP address, each level associated with a different destination IP address.
- The Examiner respectfully disagrees. Mayer's cited disclosure of evaluating the query object against the rule-base of each gateway node encountered in the search of the gateway-zone graph meets the contested limitations, since Mayer discloses more than one separate graph searches are performed when a source-host group is contained in more than a single zone. Disclosure of these multiple graph searches and rule-base evaluations being performed based upon the make-up of the source host group illustrates various levels of filtering in Mayer, and is therefore relied upon to properly reject the claim limitation of "obtaining a filtering level associated with the source IP address". Further, as shown in response to the arguments of claim 18, Mayer discloses the query object is evaluated against each rule-base object for each gateway node encountered in the search of the gateway-zone graph, thus meeting the limitation of "storing the list of filtering levels and



associated destination addresses". Therefore, the rejections of claims 19 and 20 are proper.

- On pg. 16 of the Brief, Appellant contends that Mayer's gateway-zone graph does not teach or suggest a list of IP addresses to be filtered or a routing table, as set forth in claims 1, 21, and 24, respectively.
- The Examiner respectfully disagrees. As described in the rejection of claims 1, 21 and 24, a query object is propagated (routed) to each gateway specified in the Mayer's gateway-zone graph and evaluated against the filtering files of those gateways. Mayer further discloses each gateways interface has its own unique IP address. Therefore, Mayer's disclosures relating to the gateway-zone graph meets the limitations of a list of IP addresses to be filtered and a routing table, as in claims 1, 21, and 24.
- On pg. 18-19 of the Brief, Appellant contends that Mayer does not properly reject claims 11-13, 17, and 25 because Mayer does not teach or suggest an IP address being on a list.
- The Examiner respectfully disagrees. As shown above, Mayer's disclosure of gateway-zone graph meets the limitations of a listing of IP addresses to be filtered. Further, the rejection of claims 11-13, 17, and 25 admits that Mayer does not explicitly disclose the

limitation of receiving content without forwarding the requests to any filtering routers when the IP destination is not included on such a "list of addresses" to be filtered. However, based upon Mayer's disclosure of passing a query unrestricted when the query is not restricted by the filtering files of the gateways in the gateway-zone graph, the limitations of claims 11-13, 17, and 25 are found to be obvious. One of ordinary skill in the art would recognize the logic of the concept that content will not be filtered if none of the conditions for performing filtering are met. Therefore, a user query in Mayer will not be processed against the filtering files of any gateways if the addresses involved in the query are not listed in the gateway-zone graph of the firewall service. Therefore, the disclosure of Mayer suggests the limitations of claims 11-13, 17, and 25, and the rejections based upon obviousness over Mayer are proper.

- On pg. 19-20 of the Brief, Appellant contends that there is no teaching or suggestion for the combination of the border gateway protocol of Shah with the disclosure of Mayer.
- The Examiner respectfully disagrees. Mayer's disclosure of filtering discloses firewalls and filtering implemented in routers and gateways, in general. Mayer does not discuss particular gateway protocols, such as the claimed border gateway protocol. Shah is relied upon to illustrate the use of border gateway protocol in an

analogous disclosure pertaining to network performance evaluation of border gateway protocol. Combination of Mayer with Shah would enable the method of Mayer to be applied to specific gateway protocols such as the known border gateway protocol disclosed by Shah. Therefore, the rejections of claims 5 and 6 are proper.

- In general, Appellant's arguments in the Brief filed 1/11/2008 contend that Mayer does not meet the claim limitations based upon a narrow reading of the claim language. Appellant contends that Mayer fails to meet the limitations based upon Mayer's lack of common terminology and/or context when compared to the explicit claim language. Appellant fails to consider the broadest reasonable interpretations of the claims taken by the Examiner in rejecting the pending claims. The Examiner has tried to articulate these interpretive positions as clearly as possible within the rejections (see, for example, pg. 3 of the Final Rejection, which describes how the Examiner has equated the disclosure of Mayer to the "determining" and "routing" steps of claim 1). Therefore, the Examiner believes each of the claim rejections are reasonable and supported by the cited prior art.

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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Gregory B Sefcheck/

Examiner, Art Unit 2619

3-18-2008

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